REMARKS

In the Office Action dated May 7, 2002, claims 20-23 and 29-32 are pending. Claims 20-23 are under consideration. The declaration is objected to as allegedly defective. The abstract is objected to for certain informalities. The specification and the claims are objected to for allegedly failing to fully comply with the Sequence Rules. Claims 20-23 are rejected under 35 U.S.C.§101 as allegedly directed to non-statutory subject matter. Claims 20-23 are further rejected as allegedly failing to comply with the written description requirement of 35 U.S.C. §112, first paragraph. Claims 20-22 are rejected under 35 U.S.C.§102(b) as allegedly anticipated by Williams (U.S. Patent 5,032,396). Claim 23 is rejected under 35 U.S.C.§103 as allegedly unpatentable over Suggs et al. in view of Williams.

This Response addresses each of the Examiner's objections and rejections. Applicants therefore respectfully submit that the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

Regarding the oath, the Examiner states that the oath is defective allegedly because the signatures and dates of the second and third inventors are illegible.

Applicants respectfully submit that the declaration submitted in the present application is a copy of the original declaration filed in the grandparent case, Application Serial No. 08/454,295. As the original declaration has been submitted and accepted in the grandparent case, Applicants request that the copy of the declaration submitted in the present application be accepted.

As to the abstract of the present application, the Examiner indicates that the term "said" on lines 5-7 has been replaced with the word "the". Applicants acknowledge such modification made by the Examiner.

Regarding the objection to the specification and the claims, the Examiner states that the specification presents certain amino acid sequences that are not identified by sequence identifiers at page 9 (line 33), page 10 (lines 7, 11 and 27) and page 11 (line 10). The Examiner

further states that claim 20 recites an amino acid sequence that is not identified by a sequence identifier.

Applicants respectfully submit that the specification has been amended to insert SEQ ID NO: 15 next to the sequence "X1-X2-Asn-Asp" at page 10, line 7 and page 11, line 10.

As to "R1-X1-X2-Asn-Asp-R2", which appears at page 9, line 33, page 10, lines 11 and 27, and in claim 20, Applicants respectfully submit that the central segment "X1-X2-Asn-Asp" is already represented by SEQ ID NO: 15. As described at page 10, lines 14-24, R1 and R2 can be a D or L amino acid, a peptide, a polypeptide, a protein, and can also be a non-amino acid moiety or molecule such as an alkyl, substituted alkyl, alkenyl, substituted alkenyl, acyl, dienyl, arylalkyl, arylalkenyl, aryl, substituted aryl, heterocyclic, substituted heterocyclic, cycloalkyl, substituted cycloalkyl, halo, haloalkyl, nitro, hydroxy, thiol, sulfonyl, carboxy, alkoxy, aryloxy and alkylaryloxy group and the like. Therefore, Applicants submit that "R1-X1-X2-Asn-Asp-R2" is not strictly an amino acid sequence which can be properly included in a Sequence Listing. Applicants have amended claim 20 to characterize "R1-X1-X2-Asn-Asp-R2" as a structure instead of "an amino acid sequence".

In view of the foregoing, the objection to the specification and the claims based on the Sequence Rules is obviated. Withdrawal of the objection is therefore respectfully requested.

Turning to the rejection of the claims, it is first respectfully submitted that claim 23 has been canceled without prejudice, thereby rendering the rejections thereof moot. Applicants reserve the right to pursue the subject matter of claim 23 in a continuation application. Applicants now address the rejections of claims 20-22 as follows.

With respect to the rejection of claims 20-22 under 35 U.S.C.§101, the Examiner indicates that the rejection can be overcome by amending the claims to recite an isolated peptide or isolated nucleic acid molecule.

Applicants respectfully submit that claims 20-22 have been amended in accordance with the Examiner's suggestion. Withdrawal of the rejection of claims 20-22 under §101 is therefore respectfully requested.

Regarding the rejection of claims 20-22 under the written description requirement of §112, first paragraph, the Examiner alleges that the specification does not describe in clear terms a single or a representative number of species of a protease sensitive peptide comprising R1-X1-X2-Asn-Asp-R2.

Applicants respectfully submit that the protease sensitive peptide comprising the structure, R1-X1-X2-Asn-Asp-R2, is clearly described in the specification. For example, at page 10, lines 9-24, the specification describes that the protease sensitive peptide of the present invention can be represented as R1-X1-X2-Asn-Asp-R2, wherein X1 and X2 are preferably the same amino acids and are preferably both Lys residues, and wherein R1 and R2 are the same or different, and can be a D or L amino acid, a peptide, a polypeptide, a protein, and can also be a non-amino acid moiety or molecule such as an alkyl, substituted alkyl, alkenyl, substituted alkenyl, acyl, dienyl, arylalkyl, arylalkenyl, aryl, substituted aryl, heterocyclic, substituted heterocyclic, cycloalkyl, substituted cycloalkyl, halo, haloalkyl, nitro, hydroxy, thiol, sulfonyl, carboxy, alkoxy, aryloxy and alkylaryloxy group and the like.

In addition, the specification provides an example of such protease sensitive peptide, i.e., the protease inhibitor (PI) precursor having the amino acid sequence as set forth in SEQ ID NO: 3. Such PI precursor is cleaved at six sites to produce seven peptides. See page 9 of the specification, for example. The specification further provides that each of the six protease cleavage sites is characterized by having a peptide sequence R1-X1-X2-Asn-Asp-R2. See page 9-10 of the specification and Figure 10, for example. Additional examples of the protease sensitive peptide genus are provided in the specification in Figure 10.

Accordingly, Applicants respectfully submit that the specification provides adequately written description of a number of species of the claimed protease sensitive peptide. Applicants further submit that it is not necessary to exemplify every aspect of the claimed invention in order to satisfy the written description requirement under the §112, first paragraph.

In view of the foregoing, Applicants respectfully submit that the rejection of claims 20-22 under the written description requirement of §112, first paragraph, is obviated. Withdrawal of the rejection is therefore respectfully requested.

Claims 20-22 are rejected under 35 U.S.C.§102(b) as allegedly anticipated by Williams (U.S. Patent 5,032,396). It is observed that Williams teaches the murine IL-7 protein which comprises the amino acid sequence Gln-Lys-Lys-Asn-Asp-Ala. The Examiner contends that the sequence taught by Williams is inherently a protease sensitive peptide by virtue of its structure, and thus the protease sensitive peptides of claims 20-22 are anticipated by the Williams reference.

Applicants respectfully submit that claims 20-22 have been amended to further delineate that at least one of R1 or R2 comprises an alkyl, substituted alkyl, alkenyl, substituted alkenyl, acyl, dienyl, arylalkyl, arylalkenyl, aryl, substituted aryl, heterocyclic, substituted heterocyclic, cycloalkyl, substituted cycloalkyl, halo, haloalkyl, nitro, hydroxy, thiol, sulfonyl, carboxy, alkoxy, aryloxy or alkylaryloxy group. It is observed that Williams does not teach any protease-sensitive peptide as instantly claimed in claims 20-23.

Accordingly, it is respectfully submitted that the rejection of claims 20-22 under §102(b), as allegedly anticipated by Williams, is overcome. Withdrawal of the rejection is therefore respectfully requested.

Claims 20-22 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-5 of U.S. Patent 6,261,821 (issued from the grandparent application, Serial No. 08/454,295).

Applicants will timely file a terminal disclaimer to overcome the rejection.

Finally, Applicants observe that the Examiner has not provided an examination on claims 29-32, which were added in the Preliminary Amendment mailed on June 22, 2001. These claims are directed to isolated protease sensitive peptides comprising the structure, R1-X1-X2-Asn-Asp-R2, and to a nucleic acid molecule encoding such peptide. In claim 29, R1 and R2 are further defined to be the same or different peptides. Specifically, R1 consists of 0 to about 7

amino acid residues, and R2 consists of 0 to about 12 amino acid residues. In claim 30, X1 and X2 are both defined to be Lys. In claim 31, the protease peptide is defined to consist of SEQ ID NO: 16.

As submitted in the Preliminary Amendment, claims 29-32 are fully supported by the specification. For example, the specification at pages 9-10 discloses a protease sensitive peptide comprising the amino acid sequence:

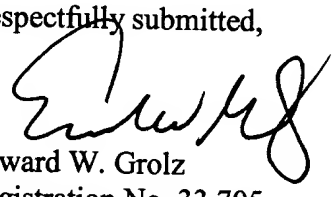
R1-X1-X2-Asn-Asp-R2

wherein X1 and X2 can be any amino acid residues, and R1 and R2 can be the same or different peptides. The specification further discloses peptide X1-X2-Asn-Asp, which is a species of peptide R1-X1-X2-Asn-Asp-R2 when both R1 and R2 consist of 0 amino acid residues. Additionally, the specification discloses XCPXXEEKKNDRICTNCCAGXKG (SEQ ID NO: 16), which is a species of peptide R1-X1-X2-Asn-Asp-R2 when R1 consists of 7 amino acid residues and R2 consists of 12 amino acid residues. Accordingly, claims 29-32 are fully supported by the specification. No new matter is introduced.

Attached is a marked up version of the foregoing amendment showing the changes made to the claims, captioned "**Version with Markings to Show Changes Made.**"

It is respectfully submitted that the present case is in condition for examination on the merits, which action is earnestly solicited.

Respectfully submitted,



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Encl.: Version with Markings to Show Changes Made

Version with Markings to Show Changes Made

IN THE SPECIFICATION:

Pages 10 and 11 have been amended as indicated in the attached marked up copies of pages 10-11.

IN THE CLAIMS:

Please cancel claim 23 without prejudice.

Please amend the claims as follows:

20. (Amended) [A] An isolated protease sensitive peptide comprising [the amino acid sequence] the structure:

R1-X1-X2-Asn-Asp-R2

Wherein X1 an X2 are preferably the same and are preferably both Lys residues, [and wherein] R1 and R2 may be the same or different and each is a D or L amino acid, a peptide, a polypeptide, a protein, or an alkyl, substituted alkyl, alkenyl, substituted alkenyl, acyl, dienyl, arylalkyl, arylalkenyl, aryl, substituted aryl, heterocyclic, substituted heterocyclic, cycloalkyl, substituted cycloalkyl, halo, haloalkyl, nitro, hydroxy, thiol, sulfonyl, carboxy, alkoxy, aryloxy [and] or alkylaryloxy group, and [the like] wherein at least one of R1 or R2 comprises an alkyl, substituted alkyl, alkenyl, substituted alkenyl, acyl, dienyl, arylalkyl, arylalkenyl, aryl, substituted aryl, heterocyclic, substituted heterocyclic, cycloalkyl, substituted cycloalkyl, halo, haloalkyl, nitro, hydroxy, thiol, sulfonyl, carboxy, alkoxy, aryloxy or alkylaryloxy group.

21. (Amended) [A] An isolated protease sensitive peptide according to claim [21]20 wherein R1 and R2 may be the same or different [and each is a peptide or polypeptide], and X1 and X2 are each Lys.

22. (Amended) [A] An isolated protease sensitive peptide according to claim 20 or 21 in recombinant or synthetic form.

30. (Amended) The isolated protease-sensitive peptide of claim 29, wherein both X1 and X2 are Lys.

31. (Amended) The isolated protease-sensitive peptide of claim 29, consisting of the sequence of XCPXXEEKKNDRICTNCCAGXKG (SEQ ID NO: 16).